B6.Cg-Park7tm1Shn Gpx1tm1Ysh Prkn tm1Shn/MgoldJ

Stock No: 023968 | Parkin -/-; DJ-1-/-; Gpx1-/-

Congenic, Targeted Mutation

Cryo Recovery

REQUEST CRYORECOVERY

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

Also Known As: Parkin -/-; DJ-1-/-; Gpx1-/-

This triple knockout strain is useful in studies of dopaminergic neuron physiology, regulation of striatal dopamine and serotonin, and Parkinson’s disease.

Donating Investigator

Matthew Goldberg, University of Texas Southwestern Medical Center at Dallas

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GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prkn tm1Shn</td>
<td></td>
</tr>
<tr>
<td>Allele Type</td>
<td>Gene Symbol</td>
</tr>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Prkn</td>
</tr>
<tr>
<td>Park7 tm1Shn</td>
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<tr>
<td>Allele Type</td>
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<tr>
<td>Targeted (Null/Knockout)</td>
<td>Park7</td>
</tr>
<tr>
<td>Gpx1 tm1Ysh</td>
<td></td>
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<tr>
<td>Allele Type</td>
<td>Gene Symbol</td>
</tr>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Gpx1</td>
</tr>
</tbody>
</table>

VIEW GENETICS

RESEARCH APPLICATIONS

Neurobiology Research
Details

Detailed Description

In the brains of patients with Parkinson's disease, the antioxidant enzyme glutathione peroxidase 1 activity level is diminished. Mutations in human PARK7 and PARK2 resulting loss of function have been linked to types of autosomal recessive Parkinson’s disease. These mice carry targeted mutations for the Park7, Gpx1 and Park2 genes. Mice that are homozygous for all 3 of the targeted mutations are viable and fertile. In triple mutant mice, 12 to 18 months of age, striatal dopamine and serotonin levels are elevated, but with normal nigral neuron numbers. Parkin<sup>−/−</sup> DJ-1<sup>−/−</sup> Gpx1<sup>−/−</sup> exhibit enhanced motor behavior and are able to outperform wildtype controls in the rotarod test. During backcrossing, the Y chromosome may not have been fixed to the C57BL/6J genetic background.

Development

Control Suggestions

Selected References

Genetics

Prkn<sup>ImTsh</sup>

Park7<sup>ImTsh</sup>

Gpx1<sup>ImTsh</sup>

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype
**Genotyping Protocols**

Standard PCR: \( \text{Gpx1}^{1\text{Ysh}}_{\text{alternate1}} \)

High Resolution Melting: \( \text{Park7}^{1\text{Shn}} \)

MELT: \( \text{Park2}^{1\text{Shn}} \)

Genotyping resources and troubleshooting

**Breeding Considerations**

When maintaining a live colony, these mice can be bred as homozygotes for each targeted mutation.

Additional Breeding and Husbandry Support

**Citation**

When using the Parkin \( +/- \), \( \text{Gpx1}^{1\text{Ysh}}_{\text{alternate1}} \)-mouse strain in a publication, please cite the originating article(s) and include JAX stock number 023968 in your Materials and Methods section.

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

**Pricing & Availability**

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Homozygous for Park7&lt;tm1Shn&gt;, Homozygous for Gpx1&lt;tm1Ysh&gt;, Homozygous for Park2&lt;tm1Shn&gt;</td>
<td>$2,595.00</td>
</tr>
</tbody>
</table>

We will fulfill your order by providing at least two carriers for each strain ordered. The total number, sex, and genotypes provided will vary, although typically 8 or more animals are provided. Please check genotypes which will be recovered. While the genotypes of all animals produced will be communicated to you prior to scheduling shipment, the genotypes of animals provided may not reflect the mating scheme and genotypes described in the strain description. Animals are typically ready to ship in 11-14 weeks. If a second recovery is required to produce the minimum number of animals, then delivery time would increase to approximately 25 weeks. If we fail to produce animals of the correct genotype, you will not be charged. We cannot guarantee the reproductive success of mice shipped to your facility. If the mice are lost after the first three days (post-arrival) or do not produce progeny at your facility, a new order and fee will be necessary.
Cryorecovery to establish a Dedicated Supply for greater quantities of mice. Mice recovered can be used to establish a dedicated colony to contractually supply you mice according to your requirements. Price by quotation.

### Related Products and Services

| Frozen Mouse Embryo | $2,595.00 per straw or vial |

### Payment Terms and Conditions

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**General Terms and Conditions**

**Questions About Terms of Use**

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Phone: 207-288-6470

Email: TechTran@jax.org

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